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ABSTRACT

A study was conducted to assess the effects of verbal reinforcement on task performance of black preschool children. Subjects were 36 black children in preschool centers serving families of two income levels. The children were stratified by age, sex, and income level and were randomly assigned to four groups: (1) middle income, praise; (2) middle income, no praise; (3) lower income, praise; and (4) lower income, no praise. A marble-dropping task was performed by each subject. Results of a two-way analysis of variance performed on the data indicated a significant level interaction effect between the praise/no praise treatment and income levels on task performance. Tests of the interaction revealed that middle income children performed significantly better when praised and that lower income children significantly outperformed middle income children when receiving no praise. Under the conditions of the study, praise did not increase performance scores of preschool children but had a differential effect according to their income levels. (Author/WAM)

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Steve H. Mitchell

VERBAL REINFORCEMENT AND TASK PERFORMANCE OF MIDDLE AND LOWER INCOME BLACK PRESCHOOL CHILDREN

Positive verbal reinforcement, or praise, is a primary tool used by parents, teachers, and others who work with young children to change behavior. "I like your picture", "Good work", and "What a helpful boy", are but a few of the many comments frequently used with young children to encourage a particular behavior. Freud (1935) explains this behavioral change phenomenon by suggesting that because preschool children are in a stage of identification with their parents, they want to please and be like these significant adults. Thus, they are particularly susceptible to cues so that they respond in ways which elicit approval from significant adults.

Skinner (1953) offers a somewhat different theoretical explanation. He proposes that when a response is followed by a reinforcer (e.g., verbal praise), the response is strengthened, and thus, is likely to occur again. Thus, for certain children being complimented on how well they are doing by an adult may encourage them to higher levels of accomplishment. For others, however, such compliments may be perceived as less desirable and thus, have no, or even a negative effect on their accomplishments. Thus, the praise so often used by adults to influence children's behavior may have different effects depending on the particular child and context.

Numerous factors have been identified as influencing the efficacy of verbal reinforcement with young children. For example, the effec-

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tiveness of praise has been found to decrease with age (Aronfreed, 1964; Beller, 1955; Heathers, 1955; Hill, 1960; Krantz & Scarth, 1979; Lewis, Wall, & Aronfreed, 1963; Mowrer, 1960; Zigler, 1963b), to depend upon the subject's race and/or socioeconomic level (Cameron & Storm, 1965; Havighurst, 1970; Katz, 1967; Spence, 1971; Terrell, Durkin, & Wiesley, 1959; Weiner & Peter, 1973; Zigler & DeLabry, 1962; Zigler & Kanzer, 1962), to depend upon the race of the experimenter and subject (Allen, Dubanoski, & Stevenson, 1966; Baron, 1970; Katz & Greenbaum, 1963; Katz, Henchy, & Allen, 1968; Kennedy & Vega, 1965; Sattler, 1970), to depend upon the subject's interest in the task (Banks, McQuater, & Hubbard, 1978; Lefcourt & Ladwig, 1965; Williams & Stack, 1972), and to be influenced by the nature of the relationship between the experimenter and subject (Deneke, McLaughlin, & Hunsaker, 1979; Irons & Zigler, 1969; McCoy & Zigler, 1965; Roodin & Simpson, 1973).

Until recently, most of the studies conducted related to verbal reinforcement have been done with all white children. When black children have been studied, they have, for the most part, been compared to white, middle-class children. Consequently, little is known about the impact of verbal praise on changing the behavior of black children from different socioeconomic levels. Thus, earlier results of verbal reinforcement studies may have missed three essential issues -- the differential effects of task interest upon the performance of black and white subjects, the differential effects of praise by white experimenters upon black and white subjects, and the differential effects of praise and socioeconomic status upon black and white subjects' task motivation. Therefore, it seems that the use of praise as

a motivational technique by adults, has different meanings for, and hence, different effects upon the black child than on the white child (Banks, et. al., 1978). Thus a salient question develops: Is verbal reinforcement an effective reinforcer for young black children regardless of income level?

In the present study, social class was operationally defined as income level. Designed to investigate the effects of verbal reinforcement upon the task performance of black preschool children, the major hypothesis under investigation was that black preschool children would increase their task performance to a greater degree when they received praise for their efforts than when they did not, regardless of income level.

A simple marble-dropping game (dependent variable) was the task performed by the subjects. This task has been used in numerous studies to determine the effects of social reinforcement (Gewirtz & Baer, 1958; McCoy & Zigler, 1965; Stevenson, 1965; Stevenson & Cruse, 1961; Zigler, 1961, 1963a, 1963b). Stevenson (1965) described the task as appropriate because it is "...quite dull, apparently endless, requires minimal prior learning, has no clear criteria for adequate performance and uses discrete responses" (p. 99). Successful performance of the marble dropping task is dependent largely on compliance with the experimenter's directions rather than on skill or learning. Since none of the subjects had any diagnosed motor handicaps, all were assumed motorically capable of successful performance. Task performance was operationally defined as the number of marbles dropped into a box during a five minute period. The independent variables in this study were

income level and social reinforcement.

METHOD

Thirty-six black children enrolled in two preschools served as subjects for the study. Children enrolled in the first center which served families referred by the local Department of Pensions and Security and who were eligible for free day care services according to Title XX Guidelines comprised the lower income population. All children in this center who met the age and income criteria established for the study were included in the sample. This lower income sample included 10 males and 8 females ranging in age from 4.0 to 6.0 years with an average age of 5.2 years. Children in the second center which served families associated with the university and nearby community who were not eligible for free day care services comprised the middle income population. The sample was drawn to match as closely as possible that of the lower income sample in terms of sex and age. It included 11 females and 7 males of 4.0 to 6.0 years with an average of 5.2 years.

The sample, stratified by age, sex, and income, was randomly assigned either to a praise or to a no-praise group. Thus, four groups emerged: 1) middle income praise; 2) middle income no-praise; 3) lower income praise; 4) lower income no-praise. Each treatment group had 9 subjects with means for age and sex distribution as indicated in Table 1.

Insert Table 1 about here

The experimental session for each child was five minutes in length. Children were tested individually in a private room in their representative schools. The child's teacher introduced the experimenter to each child prior to the experimental session. The experimenter engaged the child in a few minutes of pleasant conversation and then asked the child to go with the experimenter to play a game. When the child was comfortably seated at the table, the experimenter spent several additional minutes establishing rapport with the subject. Then the experimenter said to the child: "(Child's name), we're going to play a game. Let me tell you about it. This is called the marble game -- see the marbles? Let me show you how to play it. The marbles go in these holes on the top. You can put any marbles in either hole. These are the marbles and these are the holes. Pick up one marble at a time from the bowl and put it in either hole. If you drop a marble on the floor, just leave it and pick up another marble from the bowl. Let me show you how to do it." (The experimenter demonstrates by placing one marble at a time in each hole). "After you play the game, then we can take the back of the box off and count to see how many marbles you dropped in the box, o.k.? You can play until I tell you to stop. Now you can play the game."

The apparatus used in playing the game was: a wooden box, measurements of 7" x 8" x 14", constructed in such a way that two compartments were formed. One hole, 3/4" in diameter, was centered over both compartments. One side of the box contained Sheffield Polycarbonate Glass to promote visibility. A total of 430 marbles was made available to each child to drop through the holes. This large

number was chosen in order to supply an apparently endless source of possible marbles to drop. These were placed in two bowls, one to each side of the box.

In order to measure the timing of the reinforcement and maximum time allotted for the experimental session, a watch with a sweeping second hand was placed on the table in front of the experimenter. Once the subject picked up a marble, the watch was started. If praise was to be presented, the experimenter provided verbal statements of approval twice a minute (fixed-interval schedule) at 15 and 45 seconds within each minute, for a total of five minutes. Five statements were used during the five minutes of praise: "You're doing well; that's very good; you really know how to play the game; that's fine; you're good at this game." These statements were recorded on paper to diminish any variances in presentation. In the no-praise condition, no comments were acknowledged once the game began. If any child failed to respond for any 30 second period, the test stopped. The 30 second period of inactivity was adopted as one criterion for terminating the game because of the possibility that some subjects might be reticent to verbalize their desire to stop. If a child picked up more than one marble, he was reminded, "Pick the marbles up one at a time." If a marble was dropped on the floor, it was ignored. At the end of five minutes of play the subject was told: "Okay, it's time to stop playing." All but three of the children dropped marbles into the box for the entire scheduled session of five minutes. The task sessions of three children (two children in the middle income no-praise and one in the lower income praise groups) were terminated before the five minute

time period had expired because of the occurrence of the 30 seconds of inactivity.

RESULTS

To determine the effect of praise, income level, and their interaction on marble dropping task scores, a two-way analysis of variance was performed. As can be noted in Table 2, neither the A-factor (praise, no-praise) nor the B-factor (income level) was significant.

Insert Table 2 about here

However, the interaction effect of the two conditions, praise and income level (A x B) was significant ($p < .05$, $df = 1$). This A x B interaction is graphically presented in Figure 1.

Insert Figure 1 about here

Using T-tests to examine the interaction effect, it was found that middle income black children receiving praise significantly outperformed middle income black children who were not praised ($p < .05$, $df = 16$) and that lower income black children significantly outperformed middle income black children when neither group received praise ($p < .02$, $df = 16$). No significant differences were found between the remaining four groups (i.e., between lower income praise and lower income no-praise; middle income praise and lower income no-praise; middle income praise and lower income praise; and middle income no-praise and lower income praise).

DISCUSSION

As expected, praise increased task performance for middle income children in this study. This finding is supported by several earlier studies where praise served as a positive reinforcer for middle income subjects (Beller, 1955; Heathers, 1955; Stevenson & Cruse, 1961; Aronfreed, 1964; Allen, 1966; Senior & Brophy, 1973). For lower income children in the study, praise served to decrease the task performance. The highest mean score on the marble dropping task was achieved by lower income children in the no-praise condition whereas the lowest mean score was achieved by the lower income children in the praise condition. No published study supporting this finding was found in the literature. Lower income children have been reported to be more responsive to non-social reinforcement than middle income children (Spence, 1970). In addition, several studies have reported lower income children to be less responsive to praise than middle income children (Douvan, 1956; Zigler, 1962; Spence, 1970). However, none of these studies would suggest that a negative reaction to praise might be anticipated.

Perhaps this finding is related to the environmental conditions in which the children in the two income levels live. Positive verbal reinforcement is a more common condition in the middle income community than in the lower income community. Consequently, the middle income children may have been more accustomed to this technique. Conversely, the lower income children may be expected to produce without positive verbal reinforcement. Negative verbal reinforcement or non-verbal

reinforcement (either positive or negative) may be a more common and hence, a more effective, motivating agent for lower income children.

Another explanation for this performance difference may rest with the nature of the task. First, marble dropping has a high component of motor dexterity. If the children in the lower income group have more highly developed small muscle control than the children in the middle income group, then the influence of praise in increasing the task performance may have been masked by this dexterity. This is not believed to be a plausible explanation since marble dropping is generally assumed to be within the reportoire of normal preschool children and the subjects were believed to be normal in their motor development. Whatever variance was present among the subjects in motor development would have been equally distributed among the groups due to randomization of subjects within groups. Second, some children may like to drop marbles better than others and, therefore, be motivated toward performance of this task by task preference. Since previous studies verify that marble dropping has low intrinsic value for children in general and since the influence of competition was minimized through the instructions given to the subjects, the influence of the value of the task to the subjects also appears unlikely.

Interpreting the findings, it is important to consider that the experimenter was a white male. Festinger (1954) has suggested that individuals give value to those behaviors ascribed to by persons like themselves. Empirical support for this position has also been presented by Banks, Stitt, Curtis & McQuaker (1977) and Banks et. al. (1978). Since both the reinforcement and the instructions for performing the

task were presented by a person unlike themselves in race and in some cases, sex, the subjects' motivation to perform could have been altered by the experimenter. However, since all subjects were black, experimenter effect should have been operating equally in both income groups under each of the treatment conditions.

In any event, the data of the present study suggests that praise, when offered as a stimulus for performance on a motor task with black preschool children, not only has differential effects according to income level but has demonstrated a negative reinforcing property with lower income black preschool children. Although the reasons for the differential effect remains unclear, the study does add support to their existence and demonstrates a need for closer examination of the effects of verbal reinforcement especially within lower-income groups. In the meantime, if adults are to be effective behavioral change agents for young children, they must be sensitive to the reactions of individual children to reinforcing techniques and conditions and must select those that have positive qualities for a particular child.

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TABLE 1

Balance of Treatment Groups for Sex Distribution and Mean Age

Treatment Group	Sex Distribution	Mean Age
Lower income No-praise	5M, 4F	5.0 years
Lower income praise	5M, 4F	5.4 years
Middle income No-praise	4M, 5F	5.5 years
Middle income praise	3M, 6F	4.11 years

TABLE 2

Analysis of Variance Summary Table

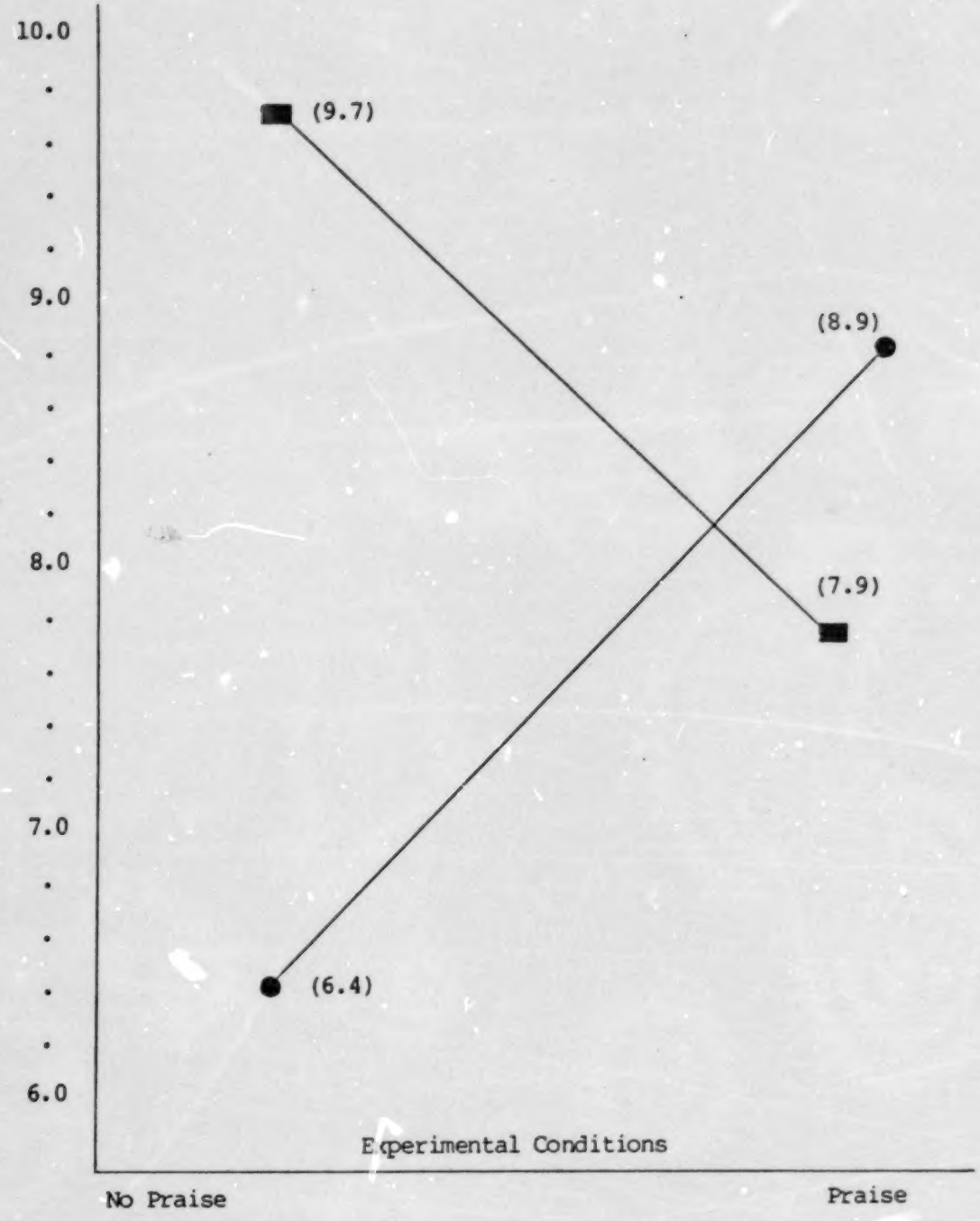
for Comparison of Groups

Source of Variation	Sum of Squares	df	Mean Squares	F
Praise/No-praise (A)	1.25	1	1.25	.205
Income Level (B)	12.53	1	12.53	2.050
Interaction (A x B)	29.76	1	39.76	6.520*
Error	195.33	32	6.10	

*p<.05=4.15

FIGURES

Figure 1. Interaction effect of income level and the experimental conditions of praise and no-praise on task performance.


10.0
9.0
8.0
7.0
6.0
(9.7)
(8.9)
(7.9)
(6.4)
Experimental Conditions
No Praise
Praise
● = Middle income group
■ = Lower income group